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(54) Title: **HYDRODYNAMICALLY BOUNDED CARRIER WEBS AND USE THEREOF**

(57) Abstract: the present invention provides a method for the production of bounded non-wovens carriers. The method includes providing a glass staple fiber containing non-woven which is pre-consolidated with a binder. The glass staple fiber non-woven is placed adjacent to one or more non-wovens of synthetic fibers and hydro-dynamically needling at a water beam pressure in the range of 100 to 400 bar.

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TITLE: Production of bound non-woven  
carriers used as roofing  
felt, involves placing glass staple  
fiber non-woven  
adjacent to synthetic fiber  
non-wovens and performing  
hydrodynamic needling under specific  
hydropressure

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PATENT-ASSIGNEE: JOHNS MANVILLE INT INC[JOHM]

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BASIC-ABSTRACT:

NOVELTY - A glass staple fiber non-woven (pre-consolidated with binder) is placed adjacent to one or more non-wovens of synthetic fibers. The adjacent non-wovens are then hydrodynamically needled under a water jet pressure of 100 - 400 bar, to obtain bound non-woven carriers.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for bound non-woven carriers.

USE - For the production of hydrodynamically bonded carrier webs used in forming bituminized roofing felts, roofing membranes, wall and floor coverings (all claimed).

ADVANTAGE - Hydrodynamic needling of two or more fiber layers can be performed with minimum amounts or without using binder. The carrier webs obtained have specific profiles that may be desirably adjusted according to a specific application. The non-woven carrier laminate has improved dimensional stability, delamination resistance, compatibility with coating and impregnating materials, improved perforation stability, improved fire retardancy and improved tear propagation resistance. The carrier web has wide applications. Final consolidation of the web by binder can be completely eliminated during manufacture of carrier webs. Formation of waves on the carrier during bituminization heat treatment is prevented.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: PRODUCE BOUND NON WOVEN CARRY ROOF FELT PLACE  
GLASS STAPLE NON  
WOVEN ADJACENT SYNTHETIC NON WOVEN PERFORMANCE  
HYDRODYNAMIC NEEDLE  
SPECIFIC

DERWENT-CLASS: A93 F04

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D90 E21 E00 ; S9999 S1183 S1161 S1070 ; S9999 S1274  
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S1092 S1070 ; S9999 S1149 S1070  
Polymer Index [1.4]  
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Polymer Index [1.5]  
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S9999 S1183  
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S9999 S1149  
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Polymer Index [1.6]  
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Polymer Index [2.1]  
018 ; H0022 H0011 ; G0340\*R G0339 G0260 G0022 D01 D12  
D10 D26 D51  
D53 D58 D63 F41 F89 ; R00835 G0566 G0022 D01 D11 D10  
D12 D51 D53  
D58 D63 D84 F41 F89 ; P0088  
Polymer Index [2.2]  
018 ; H0022 H0011 ; G0340\*R G0339 G0260 G0022 D01 D12  
D10 D26 D51  
D53 D58 D63 F41 F89 ; R00708 G0102 G0022 D01 D02 D12  
D10 D19 D18  
D31 D51 D53 D58 D76 D88 ; P1741 ; P0088  
Polymer Index [2.3]  
018 ; R00123 G1821 D01 D50 D81 F78 ; P1570\*R F78 D01 ;  
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Polymer Index [2.4]  
018 ; R00859 G1809 G1649 D01 D23 D22 D31 D45 D50 D76  
D83 F19 F10  
F07 ; R00001 G1503 D01 D50 D81 F22 ; P0259\*R P0226 D01  
; H0022 H0011

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 Polymer Index [2.5]  
     018 ; P0226 P0282\*R D01 D18 F30  
 Polymer Index [2.6]  
     018 ; P0464\*R D01 D22 D42 F47  
 Polymer Index [2.7]  
     018 ; R00835 G0566 G0022 D01 D11 D10 D12 D51 D53 D58  
 D63 D84 F41  
     F89 ; H0000  
 Polymer Index [2.8]  
     018 ; R00338 G0544 G0022 D01 D12 D10 D51 D53 D58 D69  
 D82 C1 7A ;  
     H0000 ; P1796 P1809  
 Polymer Index [2.9]  
     018 ; P1707 P1694 D01  
 Polymer Index [2.10]  
     018 ; R00859 G1809 G1649 D01 D23 D22 D31 D45 D50 D76  
 D83 F19 F10  
     F07 ; P0259\*R P0226 D01 ; H0011\*R  
 Polymer Index [2.11]  
     018 ; G3601\*R P0599 D01  
 Polymer Index [2.12]  
     018 ; ND01 ; ND07 ; N9999 N6020 N6008 ; Q9999 Q6860  
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     Q6893 Q6826 ; Q9999 Q7818\*R ; N9999 N6940 N6939  
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